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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/409,613	10/01/1999	ARMIN HAROLD CHRISTOFFERSON	R09-99-091	5640

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EXAMINER

PHAM, HUNG Q

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/409,613

Applicant(s)

CHRISTOFFERSON ET AL..

Examiner

HUNG Q PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39,41,43 and 45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39,41,43 and 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 21.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1, 10 and 19 were amended. The objected claims 40, 42 and 44, were canceled to incorporate into claims 41, 43 and 45, however, in view of the newly discovered reference(s) to Waters [USP 6,535,867 B1], new rejections based on the newly cited reference(s) follow for the pending claims 1-39, 41, 43 and 45.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 1-6, 10-15, 19-24, 28-36, 41, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waters [USP 6,535,867 B1].

Regarding to claims 1, 10 and 19, Waters teaches a system and method that computes a hash function based upon the file name, e.g. a URI, that is to be identified in a look-up table stored in external memory. As disclosed by Waters, a hash function is used to hash the file name of a file system (Col. 7, Lines 45-47).

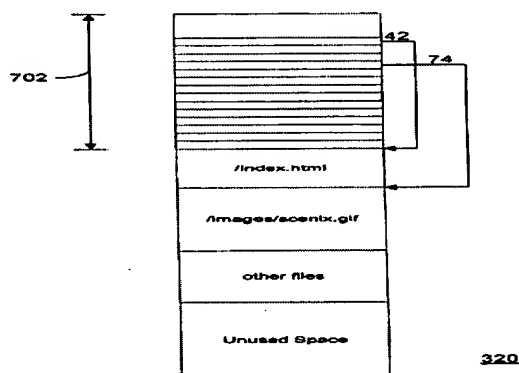


Figure 7

As shown in FIG. 7, index block 702 or look-up table as *a data structure*, with each index value is a hash value of a file name in the file system determined by the hash function. The entry of the index block is the offset to the start of the actual file corresponding to the file names of the file system (Col. 7, Lines 40-Col. 8, Lines 14). In other words, FIG. 7 illustrates *a data structure generated by applying a function to all file names in a file system to determine values corresponding to the file names, wherein the data structure indicates those values corresponding to the file names to indicate all file names used in the file system.*

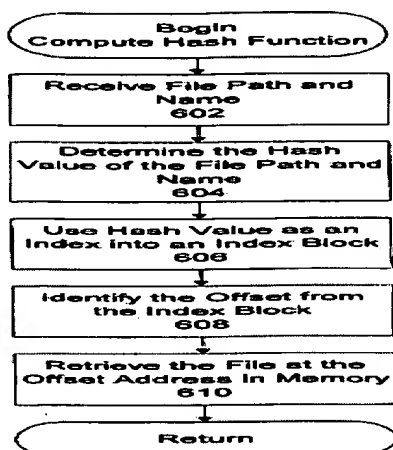


Figure 6

As shown in FIG. 6, the input file path and name is hashed by the hash function to map the input file name to a value in step 602-604. After determining the hash value for the file path and name the application uses the hash value as an index into an index block. The offset is read from the index block, and the file at the offset address is retrieved (Col. 8, Lines 15-20). The benefit of Waters technique is that no string comparisons need to be performed (Col. 7, Lines 50-53). As seen, in order to retrieve a preexisting file, the entry of the index block 702 corresponding to the hash value of the file name is checked to verify the offset at the entry as the step of *scanning the data structure without reading directory information from storage location in a storage device to determine whether there is a preexisting file in the file system having a name that maps, according to the function, to the same value to which the input file name maps*. Water further discloses a collision resolution technique could be used, e.g. double hashing to handle a collision (Col. 8, Lines 28-31). As seen, a collision, obviously, indicates *two files that map to a same value according to the function are capable of having a*

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same name, Waters does not explicitly teaches *a cache memory* is used to store the look-up tables as the data structure. However, as disclosed by Waters, the external memory 320 can be any type of memory device and is not limited to EEPROM (Col. 8, Lines 33-35). Thus, a *cache memory*, obviously, could be used to store the look-up table. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Waters method by using a cache memory to store the look-up table in order to speed up the search for an entry in the look-up table.

Regarding to claims 2, 11 and 20, Waters teaches all the claimed subject matters as discussed in claims 1, 10 and 19, Waters further discloses *the mapped-to values require fewer bits of storage than the file names* (Col. 8, Lines 1-14).

Regarding to claims 3, 12 and 21, Waters teaches all the claimed subject matters as discussed in claims 1, 10 and 19, Waters further discloses *the function is a hash function that maps the input file name to an integer value, and wherein the data structure includes an entry for each possible integer value capable of being generated from the hash function* (Col. 8, Lines 1-14).

Regarding to claims 4, 13 and 22, Waters teaches all the claimed subject matters as discussed in claims 3, 10, 21, Waters further discloses the step of *determining whether the entry for the integer value to which the input file name maps*

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indicates the presence of one preexisting file mapping to the same integer value as the input file name (Col. 8, Lines 15-21).

Regarding to claims 5, 14 and 23, Waters teaches all the claimed subject matters as discussed in claims 4, 13 and 22, Waters further discloses *the data structure is a one-dimensional array and wherein each entry is capable of having one of two values* (the first value is the offset, and the second is NULL), *further comprising setting the entry to a first value if there is one preexisting file name in the file system that maps to the integer value for the entry, and wherein determining whether there is one preexisting file comprises determining whether the entry for the integer value to which the input file name maps has the first value* (Col. 8, Lines 1-15).

Regarding to claims 6, 15 and 24, Waters teaches all the claimed subject matters as discussed in claims 1, 10, 19, Waters further discloses the steps of *applying the function to each file name in the file system to map each file name to one value; and indicating in the data structure, for each file name, that there is one preexisting file for the value to which the file name maps* (Col. 8, Lines 1-15).

Regarding to claims 28, 31 and 34, Waters teaches all the claimed subject matters as discussed in claims 1, 10 and 19, Waters further discloses the step of *searching the file system for one preexisting file having the same name as the input file name if the data structure indicates that one preexisting file has a name that maps,*

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according to the function, to the same value to which the input file maps; and performing an operation if the file system includes one preexisting file having the same name as the input file (FIG. 6).

Regarding to claims 29, 32 and 35, Waters teaches all the claimed subject matters as discussed in claims 28, 31 and 34, Waters does not explicitly disclose the step of *applying update data to the preexisting file having the same name as the input file if the file system includes one preexisting file having the same name as the input file*. However, updating a file with a preexisting file name is a conventional technique, and obviously, if there is no preexisting file, the process of updating will be rejected. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Waters and the admission method by including the step of updating in order to update a file in a file system.

Regarding to claims 30, 33 and 36, Waters teaches all the claimed subject matters as discussed in claims 28, 31, 34, Waters does not explicitly disclose the steps of *returning an error if the file system includes one preexisting file having the same name as the input file; and adding the input file to the file system if the file system does not include one preexisting file having the same name as the input file*. However, *returning an error if the file system includes one preexisting file having the same name as the input file* is a conventional technique such as Window 95

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operating system, and obviously, a file name could be added to the system if there is no preexisting file name.

Regarding to claims 41, 43 and 45, Waters teaches a system and method that computes a hash function based upon the file name, e.g. a URI, that is to be identified in a look-up table stored in external memory. As disclosed by Waters, a hash function is used to hash the file name of a file system

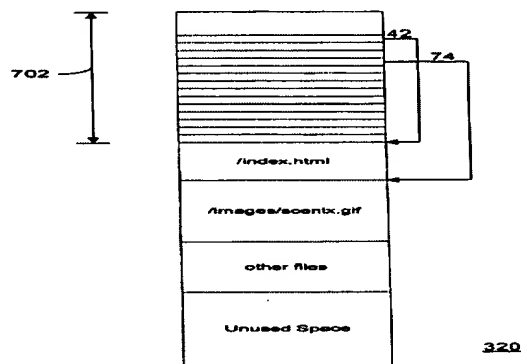


Figure 7

As shown in FIG. 7, index block 702 or look-up table as *a data structure*, with each index value is a hash value of a file name in the file system determined by a hash function. The entry of the index block is the offset to the start of the actual file corresponding to the file names of the file system (Col. 7, Lines 40-Col. 8, Lines 14). In other words, FIG. 7 illustrates *a data structure generated by applying a function to all file names in a file system to determine values corresponding to the file names, wherein the data structure indicates those values corresponding to the file names to indicate all file names used in the file system.*

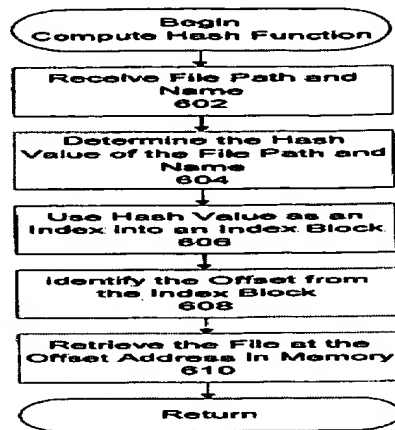


Figure 6

As shown in FIG. 6, the input file path and name is hashed by the hash function to map the input file name to a value in step 602-604. After determining the hash value for the file path and name the application uses the hash value as an index into an index block. The offset is read from the index block, and the file at the offset address is retrieved (Col. 8, Lines 15-20). The benefit of Waters technique is that no string comparisons need to be performed (Col. 7, Lines 50-53). As seen, in order to retrieve a preexisting file, the entry of the index block 702 corresponding to the hash value of the file name is checked to verify the offset at the entry as the step of *processing the data structure without reading directory information from storage location in a storage device to determine whether there is a preexisting file in the file system having a name that maps, according to the function, to the same value to which the input file name maps*. Water further discloses a collision resolution technique could be used, e.g. double hashing to handle a collision (Col. 8, Lines 28-31). As seen, a collision, obviously, indicates *two files that map to a same value according to the function are capable of having a same name*, Waters does not explicitly teaches *the data structure includes multiple*

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columns for different directories in the file system to indicate file names in different directories of the file system. However, Waters further discloses that typical file names might be "/index.html", "/images/scenix.gif", or "/applets/com/scenix/demo/Bounce.class" (Col. 7, Lines 25-29) as *file names in different directories of the file system*, and as in FIG. 7, obviously, each entry of the look-up table corresponding *different directories in the file system* such as *image* and *applets/com/scenix/demo/*. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Waters technique by including multiple columns for different directories in order to store an input file path and name.

4. Claims 7-9, 16-18 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waters [USP 6,535,867 B1] in view of Applicant Admitted Prior Art [Background].

Regarding to claims 7, 16 and 25, Waters teaches all the claimed subject matters as discussed in claims 6, 15 and 24, Waters does not discloses the step of *scanning each file in the file system to determine if there is at least one preexisting file having the same name as the input file name if there is one preexisting file in the file system having a name that maps, according to the function, to the same value to which the input file name maps* (Col. 8, lines 29-35). As in the background is the technique of *scanning each file in the file system to determine if there is at least one preexisting file having the same name as the input file name*. Thus, when a collision

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occurs, each file in the file system could be scanned in order to confirm two files having the same name.

Regarding to claims 8, 17 and 26, Waters and the admission teaches all the claimed subject matters as discussed in claims 7, 16 and 25, Waters further disclose the step of *adding the input file as a new file to the file system if no preexisting file in the file system has the same name as the input file name; and rejecting the access request if there is a preexisting file in the file system having the same name* (Col. 8, Lines 1-34).

Regarding to claims 9, 18 and 27, Waters and the admission teaches all the claimed subject matters as discussed in claims 7, 16 and 25, but fails to disclose the step of *updating a preexisting file in the file system having the same name as the input file with the data in the input file if there is such a preexisting file; and rejecting the access request if there is no preexisting file in the file system having the same name as the input file name*. However, updating a file with a preexisting file name is a conventional technique, and obviously, if there is no preexisting file, the process of updating will be rejected. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Waters and the admission method by including the step of updating if there is a preexisting file and rejecting if there is no preexisting file in order to update a file in a file system.

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5. Claims 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waters [USP 5,765,165] in view of Williams [USP 5,990,810].

Regarding to claims 37-39, Waters teaches all the claimed subject matters as discussed in claim 1, 10, and 10, but fails to disclose the function comprises *a wide hash function to produce a large number of possible hash values to minimize the likelihood that the application of the hash function to file names in the file system would have a same hash value*. Williams teaches *a wide hash function to produce a large number of possible hash values to minimize the likelihood that the application of the hash function to file names in the file system would have a same hash value* (Williams, Col. 11, lines 25-45). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Waters method, system, and an article of manufacture by using a wide hash function in order to avoid the collision when applying the hash function.

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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q PHAM whose telephone number is 703-605-4242. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Hung Pham
June 9, 2004


SHAHID ALAM
PRIMARY EXAMINER